913124 Linear Equations of first order 4 linear Pde of the 1st order Known as hagrange's lineal equation of the PP+QV=R - 0

Where P, Q and R are of functions of x, y, z. This equation is called as

quasi-linear linear equestion. When

are independent of Z , It is known as

he have to To Solve the Subsidiery equation

dx = dt = dz . ~~~ a

1. Hethod of Grouping: -

Simultaneous the se

equating and eleminating the

to form on exact ルしゃ、は、ままる 一色

Similary, equals df = dz and Remove

are the x-feeter to form an differentias equation.

VC8,4,2>=6 -(2) we get

This is called Grothing method and finally harte the general solution as 
$$\phi(u, v) = 0$$
 (or  $u = f(v)$ .

Ex solve:  $\phi(x) = 2$ 

Son: Here P=x, Q=7, R=2

A.E ax = dt = dz - O

$$\frac{dx}{x} = \frac{dt}{t}$$

$$2n = \frac{dt}{x} = \int \frac{dt}{t}$$

$$2o7t = 2o7t + 2o7a$$

$$2 = \frac{x}{t} = \frac{x}{t}$$

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3 fm. V (X, 4, 2) : 6

177 = 172 + 27 b

. The Jeneral 18

$$\phi(x/x, x/2) = 0$$

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$$\frac{dx}{\sqrt{x}} = \frac{dx}{\sqrt{y}}$$

Inagreto 7

dr - dz 12







るかってを十日 シ イスートとこめ、



J	
x.	= 32 + 3
3	3

Creigneting,
$$\frac{x^2}{2} = \frac{z^2}{2} + b \quad \text{(on)}$$

: The G. 4 Ts 
$$\phi(x^3-x^3, x^2-z^2)=0$$

Solo:-
Here 
$$P = \frac{y^2z}{x}$$
,  $Q = xz$ ,  $R = J^2$ 

Rearity the equetion,

y2 z p + x2 z v = 72x

Pっずる、Qっなっ、Rこず2x



$$\frac{d^2}{y^2z} = \frac{d^2}{z^2z} = \frac{d^2}{y^2z}$$





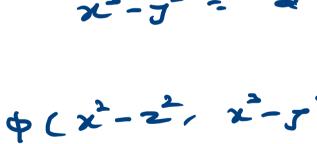












$$\frac{AE}{I} = \frac{dZ}{I} = \frac{dZ}{L \cdot \chi(\chi + \chi)}$$

In experien?
$$\chi = -7 + c \Rightarrow \chi + 3 =$$

$$x = -T + c \Rightarrow x + 3 = c$$

- 9-7 c d7 = dZ

でしていかかっている

$$\frac{dx}{x} = \frac{dy}{-y} = \frac{d^2}{y^2 - x^2}$$

Mos

$$\frac{dy}{-y-x} = \frac{dz}{y^2-x^2}$$

acz-\*]

= dJ-d x

$$-(J-x)^2 = Z + b$$

中しなみ(はかづ+2)=0/